

Application No.: 10/690,088

Case No.: 58136US004

**Amendments to the Specification**

Please replace the paragraph starting on page 9, line 4 with the following amended paragraph:

Apart from the fact that the polymerization is conducted using fluoropolymer particles or fluorinated liquid and (substantially) without an emulsifier, the polymerization is otherwise carried out in the usual manner. The initiator system used in the aqueous emulsion polymerization process of the present invention includes initiator systems that generate free radicals through a redox reaction such as for example a combination of an oxidizing agent and a reducing agent. Suitable oxidizing agents include persulfates including for example ammonium persulfate (APS), potassium persulfate (KPS) and sodium persulfate, preferably APS or KPS. Suitable reducing agents include sulfites, such as sodium sulfite, sodium bisulfite, a metabisulfite such as sodium or potassium bisulfite, pyrosulfites and ~~thiosulfates~~ thiosulfites, preferably  $\text{Na}_2\text{S}_2\text{O}_5$ , metal ions such as copper, iron, and silver. Another redox based initiation system that can be used includes manganese systems such as those deriving from potassium permanganate,  $\text{Mn}^{3+}$ -salts (like manganese triacetate, manganese oxalate, etc.). The preferred metal salt is  $\text{KMnO}_4$ .

Please replace the paragraph starting on page 9, line 17 with the following amended paragraph:

Still further, the polymerization may be initiated with an initiator that decomposes thermally such as a persulfate. Thus, a persulfate can also be used on its own without presence of a reducing agent. Additionally peroxides such as ~~hydro-peroxides~~ hydroperoxide, peresters etc. can be used as initiators; a preferred system comprises tert-butyl ~~hydro-peroxide~~ hydroperoxide for example with/without Rongalit ( $\text{HO-CH}_2\text{-SO}_2\text{Na}$ ).

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Please replace the paragraph starting on page 16, line 14 with the following amended paragraph:

A polymerization kettle with a total volume of 47.5 l equipped with an impeller agitator system was charged with 29.0 l deionized water, 107 g  $K_2HPO_4$  and 487 g 30% aqueous ammonium perfluorooctanoate solution (FX-1006 from 3M Company). At 71°C and an agitator speed of 240 rpm the oxygen-free kettle was pressurized with 15 g propylene to 0.9 bar absolute, with 666 g ~~vinylidenedifluoride~~ vinylidene fluoride (VDF) to 11.9 bar absolute and with 421 g tetrafluoroethylene (TFE) to 16.0 bar absolute reaction pressure. The polymerization was initiated by feeding 129 g APS (ammonium peroxodisulfate) dissolved in water. As the reaction started, the reaction pressure of 16.0 bar absolute was maintained by the feeding TFE, propylene and VDF into the gas phase with a feeding ratio propylene (kg)/TFE (kg) of 0.228 and VDF (kg)/TFE (kg) of 0.526. The reaction temperature of 71°C was also maintained. When 4463 g TFE feed was completed after 430 min the monomer valves were closed. The obtained polymer latex was free of coagulum, had a solid content of 20

Please replace the paragraph starting on page 17, line 10 with the following amended paragraph:

The polymerization kettle used for example 1 was charged with 29.0 l deionized water and was heated up to 71°C, the agitation system was set to 240 rpm. The kettle was pressurized with 665 g ~~vinylidenedifluoride~~ vinylidene fluoride (VDF) to 11.3 bar absolute 451 g tetrafluoroethylene (TFE) to 16.0 bar absolute reaction pressure, no propylene was precharged this time. The polymerization was initiated by feeding 40 g APS (ammonium peroxodisulfate) dissolved in water. As the reaction started, the reaction pressure of 16.0 bar absolute was maintained by the feeding TFE and VDF into the gas phase with a feeding ratio VDF (kg)/TFE (kg) of 0.526. The reaction temperature of 71°C was also maintained. When 80 g TFE feed was completed after 8 min, another 89 g of APS dissolved into water was additionally charged into the kettle and propylene was also fed with a feeding ratio propylene (kg)/TFE (kg) of 0.228. When 4463 g TFE feed was completed after 442 min the monomer valves were closed. The so

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obtained polymer dispersion was also free of coagulum, had a solid content of 20.4% and the latex particle diameter was 214 nm according to dynamic light scattering.

Please replace the paragraph starting on page 18, line 29 with the following amended paragraph:

The polymerization kettle as used for example 1 was charged with 29.0 l deionized water and was heated up to 60°C. The agitation system was set to 240 rpm. The kettle was pressurized with 5 g propylene to 0.4 bar absolute, with 671 g ~~vinylidenedifluoride~~ vinylidene fluoride (VDF) to 11.9 bar absolute and with 429 g tetrafluoroethylene (TFE) to 16.0 bar absolute reaction pressure. Additionally, 65 g of Fluoroinert™ FC-70 (commercially available from 3M Company) were added into the kettle as hot spray introduced into the kettle by a steam heated aerosol nozzle. The polymerization was initiated by feeding 40 g APS (ammonium peroxodisulfate) dissolved in water. The reaction pressure of 16.0 bar absolute was maintained by the feeding TFE, propylene and VDF into the gas phase with a feeding ratio propylene (kg)/TFE (kg) of 0.076 and VDF (kg)/TFE (kg) of 0.526 as the reaction started. The feeding ratio of propylene (kg)/TFE (kg) was increased to 0.228 after 9 min and the reaction temperature of 60°C was raised to 71°C within 10 min. After that the reaction temperature of 71°C was maintained. Within the polymerization, PPVE-2 is additionally fed as heated aerosol with a feeding a feeding rate 12 g/h. Another portion of 40 g APS was added after 2 h and 4 h polymerization time. The TFE feed of 4463 g was completed after 365 min and the monomer valves were closed. The obtained polymer dispersion was also free of coagulum, had a solid content of 20.1% and the latex particle diameter was 287 nm according to dynamic light scattering. The polymer shows a glass transition temperature of -8.5°C (midpoint value) and a solution viscosity of 81 ml/g.